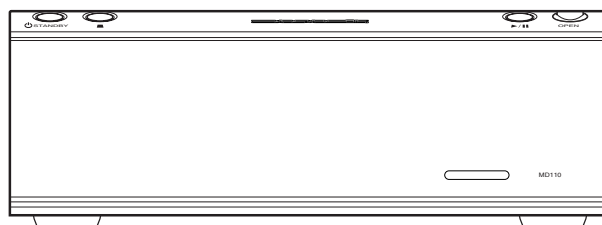


Service Manual

MD110 /F1S, /N1S

MD Deck



MDLP

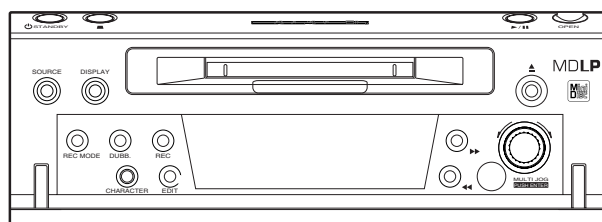


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Please use this service manual with referring to the user guide (D.F.U.) without fail.

修理の際は、必ず取扱説明書を準備し操作方法を確認の上作業を行ってください。

marantz®

MD110

325W855010 MIT
3120 785 22730
First Issue 2001.12

MD110

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Using superior design and selected high grade components, **MARANTZ** company has created the ultimate in stereo sound. Only original **MARANTZ** parts can insure that your **MARANTZ** product will continue to perform to the specifications for which it is famous.

Parts for your **MARANTZ** equipment are generally available to our National Marantz Subsidiary or Agent.

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Parts can be ordered either by mail or by Fax.. In both cases, the correct part number has to be specified.

The following information must be supplied to eliminate delays in processing your order :

1. Complete address
2. Complete part numbers and quantities required
3. Description of parts
4. Model number for which part is required
5. Way of shipment
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MARANTZ AMERICA, INC.
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ITASCA, IL. 60143
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3GA, HANGANG-RO, YONGSAN-KU, SEOUL
KOREA
PHONE : +822 - 3232 - 155
FAX : +822 - 3232 - 154

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.

Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.

Ref. UL Standard No. 1492.

In case of difficulties, do not hesitate to contact the Technical
Department at above mentioned address.

1. TECHNICAL SPECIFICATIONS

MAIN UNIT (MD110)

Type	MiniDisc Digital Audio System
Laser	Semiconductor laser
Recording method	Magnetic field modulation overwrite method
RPMs	Approximately 400rpm to 900rpm (CLV)
Sampling frequency	44.1 kHz
Frequency characteristics	20 to 20 kHz (± 1 dB)
S/N	85 dB or greater
Total Harmonic Distortion	0.005 % or less
Wow and Flutter	Less than measurable limits
Line output level	2.0 Vrms
Analog Input	250 mVrms

GENERAL

Power supply	AC 100 V 50 / 60 Hz (F version) AC 230 V 50 Hz (N version)
Power Consumption <Electric Appliance Control Act>	16 W
Maximum external dimensions (W x H x D)	210 x 71.5 x 310 mm
Weight	3.3 kg

ACCESSORIES

Remote Control Transmitter (RC110DRMD/N1S, RC110DRMDF/F1S)	1
External dimensions (W x H x D)	50.5 x 154.5 x 25 mm
Weight	60 g
AA type batteries	2
Stereo audio cable	1 pair
Coaxial cable	1
Remote control cable	1

The specifications and external appearance are subject to change without notice.

Some portions of the illustrations that appear in this manual may differ slightly from the actual product.

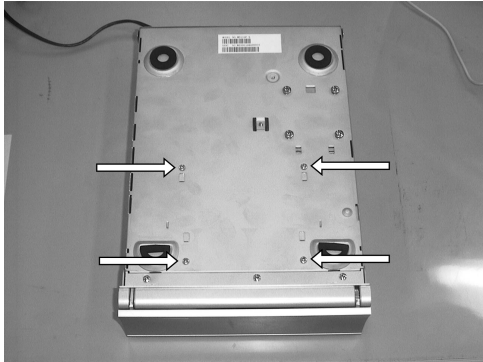
This product is licensed under U.S. and foreign patents of Dolby Laboratories.

2. SERVICE MODE

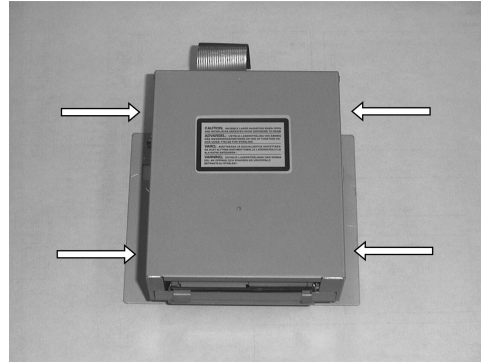
Service Mode

1. While Mains cord is disconnected, press **DISPLAY** Button on the unit and plug in the Mains cord.
2. Version number of the front micom software is displayed.
3. Turn **JOG** dial to either direction then Display segment test begins.
4. First all the segments will light and then a segment turns off one by one.
5. Disconnect Mains cord to quit service mode.

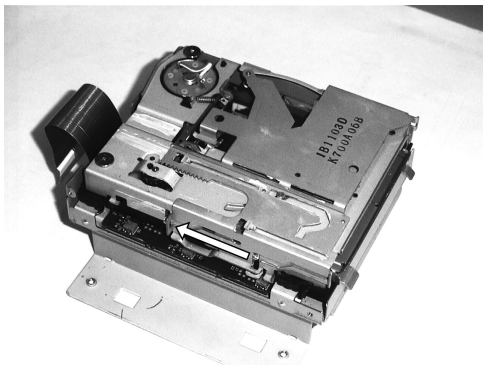
Emergency Eject



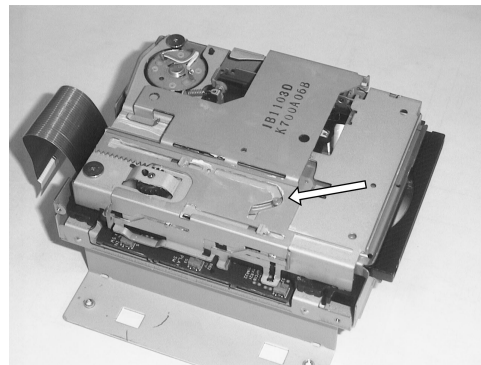
1. Remove 5 screws on the top cover and remove the top cover.
2. Remove 4 screws on the bottom. (Pointed with the arrows in the picture above.)



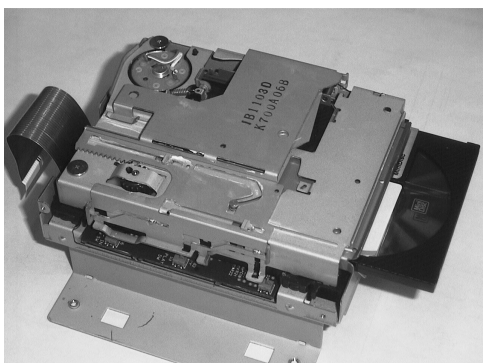
3. Disconnect the flexible wire.
4. Remove the MD mechanism component from the unit and remove the 4 screws on the both sides. (Pointed with the arrows in the picture above.)



5. Slide the lever pointed with the arrow to the direction of the arrow.



6. Slide the pin pointed with the arrow to the direction of the arrow.



7. Disc is ejected.

TEST MODE

1 How to Setting and Cancel Test Mode

Setting: While pressing the PLAY/PAUSE keys, insert the power cord to the wall outlet.

Cancel: Pull out the power cord.

Key Operation for Adjustment

Key	Operation
MULTI JOG	Select parameter and mode.
PLAY	Fix items. Change of display in every check.
STOP	Cancel or back of test mode.

2 Remained Keys Operation

Key	Operation
DISPLAY	Display changes.
FF	Pickup moves outwards when press FF key
FB	Pickup moves inwards when press FB key

3 Selection of test mode

13 test modes are selected by pressing UPIDOWN keys.

No.	Display	Description	Section
1	TEMP ADJUST	The work of adjustment is unnecessary in this mode	6-5
2	LDPWR ADJUST	Laser power adjustment	6-6
3	LDPWR CHECK	Laser power check	6-6
4	EF BAL ADJUST	Traverse adjustment	6-7
5	TE B. ADJUST	Automatic EF balance adjustment	
6	FBIAS ADJUST	Focus bias adjustment	6-8
7	CPLAY MODE	Continuous playback mode	5-4
8	CREC MODE	Continuous recording mode	5-5
9	STT-LIMIT SW	Check the mechanism start limit SW position	-
10	JUMP MODE	Track jump checking mode	-
11	SRV DAT READ	Servo data reading	-
12	EEP MODE	E2PROM data reading or rewrite	-
13	EEP INITIAL	E2PROM data initializing	-

For more information on each adjustment mode, refer to each section of 6, "Electrical adjustment".

If other adjustment mode has been entered incorrectly, press the STOP key to exit the mode.

*The number 9 -13 are not used for service. If these modes have been entered incorrectly, press the STOP key immediately to exit the mode. Specially, do not use EEP INITIAL. (E2PROM data has initialized if used it.)

4 continuous Playback Mode

1. Setting of Continuous Playback Mode

No.	Key	Display/Function
1	MULTI JOG	Select [CPLAY MODE]
2		Load disc
3	PLAY	[CPLAY MID] [c=xxxx a=yy] error (xxxx=C1 error, yy=ADIP error)
4	DISPLAY	[CPLAY (zzzz)] CPLAY address (MID=0300h, OUT=0700h, IN=0030h cluster)
5	DISPLAY	[h****d@ @ @ @] address (****=current head address, @ @ @ @=ADIP address)

In No.5, Display shows [-] if can't read disc.

2. Change of Playback Points (In continuous playback mode)

No.	Key	Display/Function
1	PLAY	[CPLAY OUT]
2		Carry out No.4 and 5 in the above table
3	PLAY	[CPLAY IN]
4		Carry out No.4 and 5 in the above table
5	STOP	[CPLAY MODE]
6		EJECT Disc out

5 Continuous Recording Mode

1. Continuous Recording Setting

No.	Key	Display/Function
1	MULTI JOG	Select [CREC MODE]
2		Load the recordable disc
3	PLAY	[CREC MID]
4	PLAY	[CREC (zzzz)] CREC address (0300h cluster = recording start point)
5	DIS PLAY	[h****d @ @ @ @] address
6	DISPLAY	[c=xxxx a=yy] error
7	DISPLAY	[CREC (zzzz)]
8	STOP	[c=xxxx a=yy]

2. Change and End of Recording Points

No.	Key	Display/Function
1		Carry out No.1 to 3 in the above table Select [CREC MID]
2	MULTI JOG	[CREC OUT]
3	PLAY	[CREC (zzzz)] CREC address (0700h cluster = recording start point) Carry out No.5 to 8 in the above table
4		Carry out No.1 to 3 in the above table
5	PLAY	Select [CREC MID]
6	MULTI JOG	Select [CREC IN]
7	PLAY	[CREC (zzzz)] CREC address (0300h cluster = recording start point) Carry out No.5 to 8 in the above table
8	EJECT	Disc out

Starting address is the followings.

IN=30h cluster, MID=300h cluster, OUT=700h cluster

1. The recording start addresses of IN, MID, and OUT are described below.

IN 30H cluster
MID 300H cluster
OUT 700H cluster

2. An erasure prevention control is not detected in the test mode. Be careful not to enter the continuous recording mode using a disc containing the data that should not be erased.
3. Do not record continuously for more than five minutes.
4. Take care that no vibration is applied during continuous recording.

Electrical adjustment

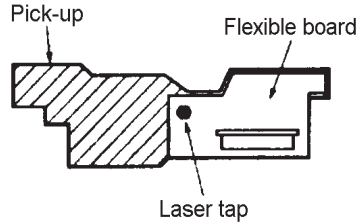
1 Precaution during confirmation of Laser Diode emission

During adjustment, do not view the emission of a laser diode from just above for confirmation. This may damage your eyes.

2 Precaution on handling of Optical pick-up (KMS-260B)

The laser diode in an optical pick-up is easy to be subject to electrostatic destruction. Therefore, solder-bridge the laser tap on the flexible board when handling the optical pick-up.

When removing the flexible board from the connector, make a solder bridge in advance, then remove the board. Be careful not to remove the solder bridge before inserting the connector. Moreover, take careful measures against electrostatic destruction. The flexible board is cut easily. Handle the flexible board with care.



3 Precaution during adjustment

1) Perform the adjustment and confirmation marked with "O" in the order shown in the table when the parts below are replaced.

	Optical pick-up	BD board		
		IC6	D101	IC1, IC2, IC10
1. Temperature compensation offset adjustment	X	O	O	O
2. Laser power adjustment	O	O	X	O
3. Trtvense adjustment	O	O	X	O
4. Focus bias adjustment	O	O	X	O
5. Error rate confirmation	O	O	X	O

2) In the test mode, perform the adjustment. After adjustment is completed, cancel the test mode.

3) Perform the adjustment in the order described.

4) Use the following tools and measurement equipment.

CD test disc TGYS-1

Laser power meter

Oscilloscope (with bandwidth of more than 40 M Ohms)

(Calibrate the probe before measurement)

Digital voltmeter

Thermometer

5) Take care that VC and GND (ground) are not connected on the oscilloscope when two or more signals are monitored on the oscilloscope. (VC and GND are short-circuited in this case,)

4 Creating the recordable continuous recording disc

This disc is used for focus bias adjustment and error rate confirmation. How to create the recordable continuous recording disc is 5-5

5 Offset Adjustment

No.	Kay	Display/Function
1	MULTI JOG	Select [TEMP ADJUST]
2	PLAY	[TEMP = xx (yy)] (xx = compensation data, yy = setting temperature)
3	MULTI JOG	Input "yy" with present temp.
4	PLAY	[TEMP=**SAVE] [TEMP ADJUST] in writing data

6 Laser Power Check and Adjustment

Laser power setting in playback and recording modes.

Preparation

1. Remove the MD mechanism from the unit
2. Remove the case and bracket.
3. Reconnect the flat cable of MD mechanism to the unit



1. Laser Power Adjustment

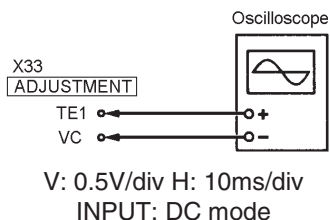
No.	Key	Display/Function
1	MULTI JOG	[LDPWR ADJUST] Load recordable disc
2		Load the disc and laser on [a0.9mW>\$xx] read power (xx = power value)
3	EJECT	Unload the disc and laser on
4	FF/FB (REC)	Move the pickup to check the laser power with laser power meter sensor (Press the REC key if the pickup is in the proper position)
5	MULTI JOG	Adjust "xx" so that the power meter shows 0.9mW.
6	PLAY	[a7.0mW>\$xx] writing power
7	UPIDOWN	Adjust "xx" so that the power meter shows 7.0mW. This adjustment should be carried out in 15secs.
8	PLAY	Laser power off Display shows [LDPWR ADJUST] after [LDPWR<\$xx] to save the data in E2PROM

Start from No.2 if readjust.

2. Laser Power Check

No.	Key	Display/Function
1	UP	[LDPWR CHECK]
2	PLAY	[c0.9mW>\$xx] (xx=0.85 to 0.95mW)
3	PLAY	[c7.0mW>\$xx] Laser power meter: 7.0 + - 1.0mW*

7 Traverse Adjustment



FE Balance

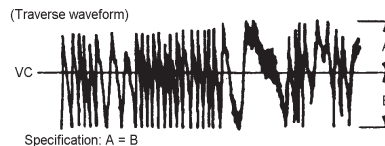
1. Recordable Disc

No.	Key	Display/Function
1		Connect the oscilloscope to TE1 and VC in X33 PCB
2	MULTI JOG	Select [EFBAL ADJUST]
3		Load the recordable disc
4	PLAY	[EFBAL MO-W]
5	PLAY	[EF=\$**MOW]
6	MULTI JOG	Write adjustment. Adjust the waveform as follows.
7	PLAY	Display shows [EF=\$**MOR] after [EFB=**xSAVE] to save the data in E2PROM. Mode changes write to read Focus and disc servo are on. Tracking servo off.
8	MULTI JOG	Read power adjustment. Adjust the waveform as follows.
9	PLAY PLAY	Save the data in E2PROM. Display shows [EFBAL MO-P] Display shows [EF=\$**MOP] (Pickup travels to search pits and tune the servo to on.)
10	MULTI JOG	Adjust the waveform as follows.
11	PLAY	Display shows [EFBAL CHANGE] after [EFB=**xSAVE] to save the data in E2PROM. Display shows [EFBAL CHANGE] disc motor stops.
12	EJECT	Unload disc.

2. PER Master Test Disc (TGYS-1)

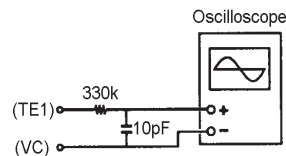
No.	Key	Display/Function
1		Load the disc (TGYS-1).
2	PLAY	[EF=\$**CD] servo is on
3	MULTI JOG	Adjust the waveform as follows.
4		Save the data in E2PROM. Display shows [EFB=**xSAVE] in brief time. [EFBAL ADJUST]
5	EJECT	Unload disc.

During this adjustment, the oscilloscope changes in units of about 2%. Adjust so that the waveform comes nearest to the specified value. (MO groove read power traverse adjustment)



Notes:

1. Data is erased during MO write when a recorded disc is used for this adjustment
2. If the traverse waveform is difficult to be monitored, connect an oscilloscope as shown in the figure below.



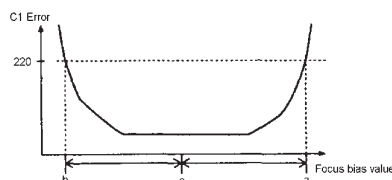
8 Focus Bias Adjustment

Use the special disc (continuous recorded disc)

No.	Key	Display/Function
1	MULTI JOG	Select [FBIAS ADJUST]
2		Load the disc.
3	PLAY	[a=xx yyyy/zz] point a (xx = focus bias yyyy = C1error)
4	UP	Adjust "yyyy" to 220*
5	PLAY	[b=xx yyyy/zz] point b
6	DOWN	Adjust "yyyy" to 220*
7	PLAY	[xx yyyy/zc=] point c Check "yyyy" within 50
8	PLAY	Display shows [aa bb cc(xx)] focus bias adjust (aa = point a, bb=b, cc=c)

Notes:

1. The relation between the C1 error and focus bias value is shown in the figure below. Points "a" and "b" in the figure are detected by the above adjustment. Focal position "C" is automatically obtained from points "a" and "b" by calculation.
2. The C1 error rate fluctuates. Therefore, perform the adjustment according to the observed mean value.



9 Error Rate Check

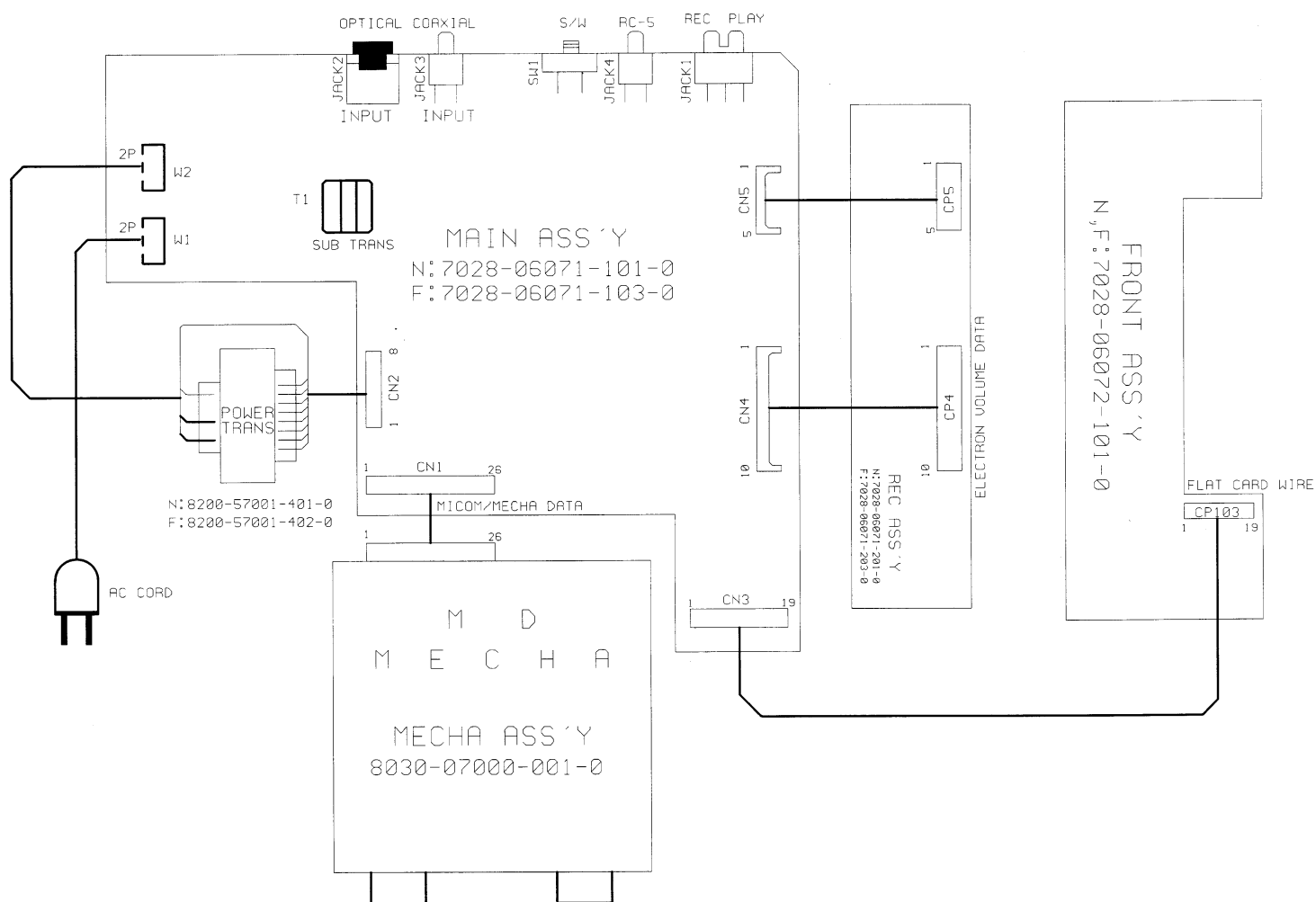
1. CD Error Rate

No.	Key	Display/Function
1	MULTI JOG	[CPLAY MODE]
2		Load the test disc (TGYS-1)
3	PLAY	Display shows [CPLAY MID] Access and [c=xxxx a=yy] xxxx=C1 error (lower 20) yy = AIDP error
4	STOP	[CPLAY MODE]
5	EJECT	Unload disc.

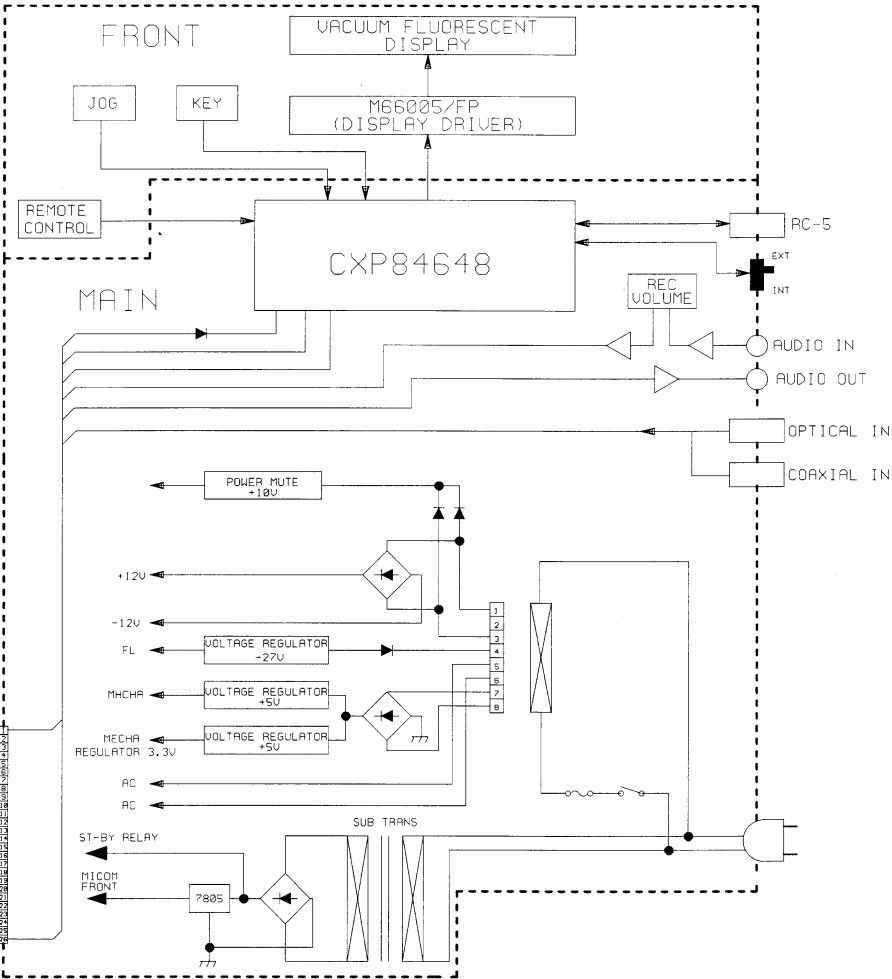
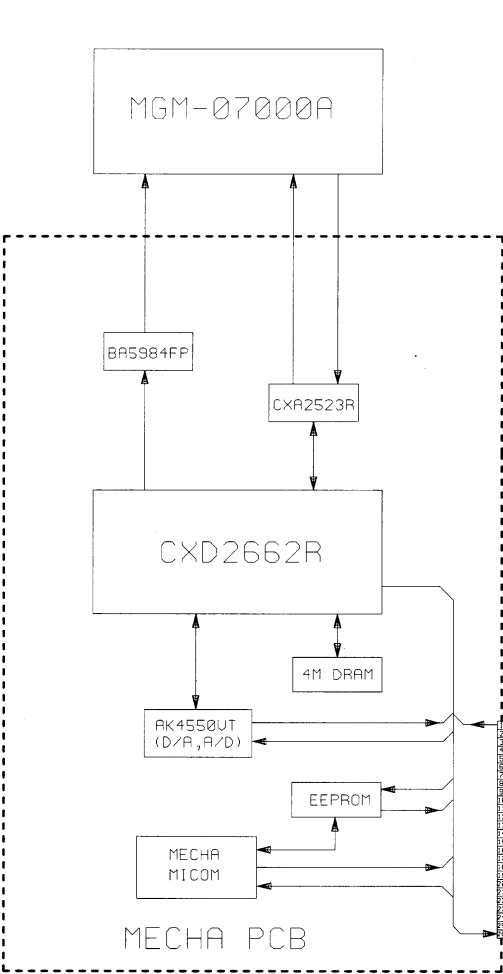
2. MO Error Rate

No.	Key	Display/Function
1	MULTI JOG	[CPLAY MODE]
2		Load the recordable disc
3	PLAY	Display shows [CPLAY MID] Access and [c=xxxx a=yy] xxxx=C1 error (lower 50) yy = AIDP error (00)
4	STOP	[CPLAY MODE]
5	EJECT	Unload disc.

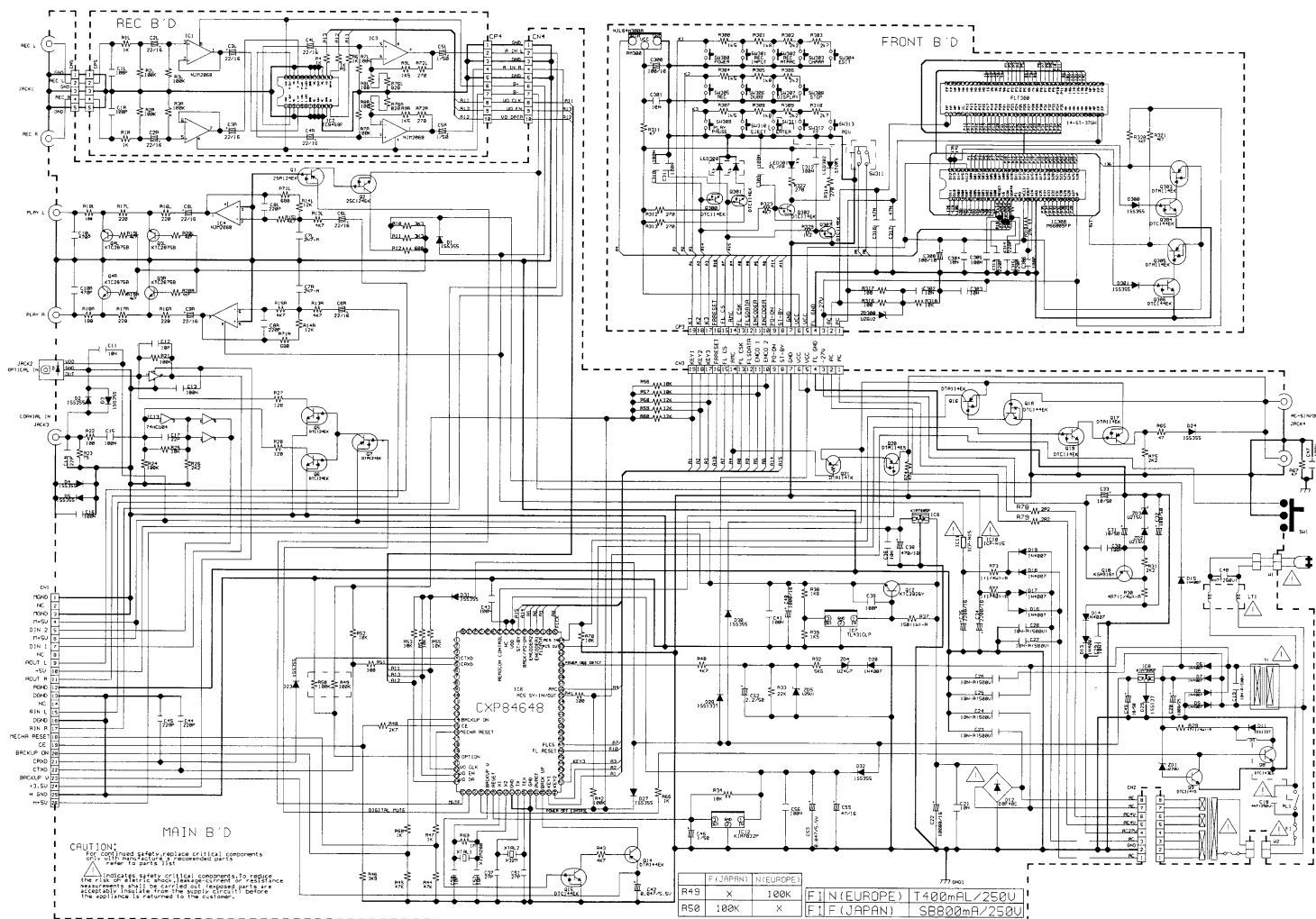
3. WIRING DIAGRAM



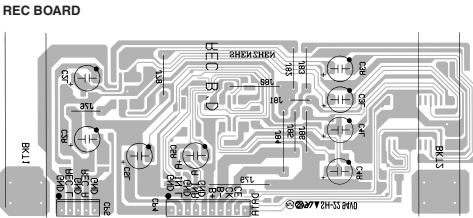
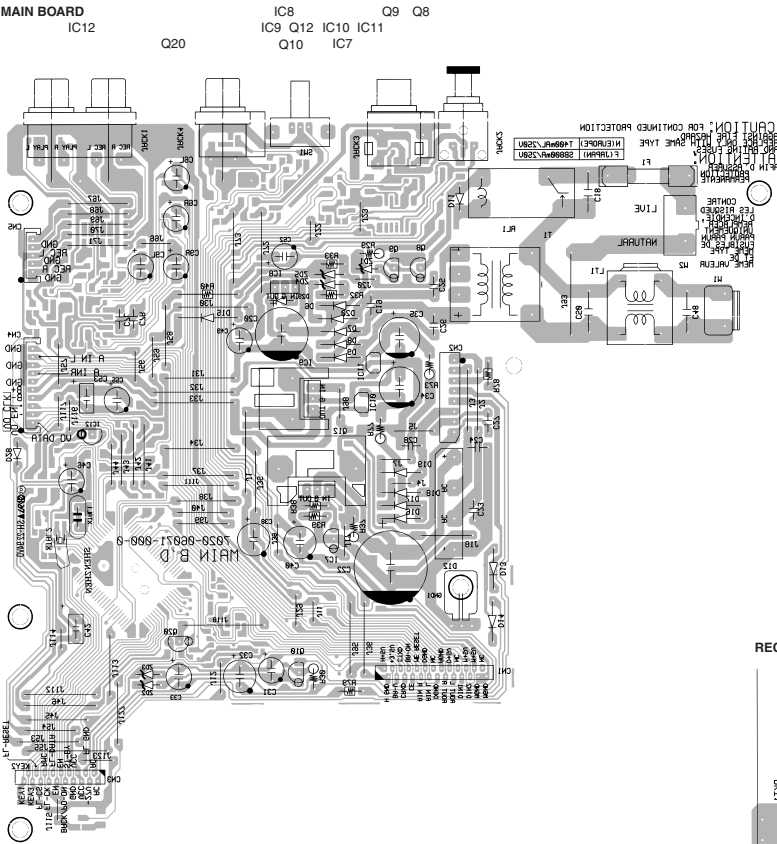
4. BLOCK DIAGRAM



5. SCHEMATIC DIAGRAM

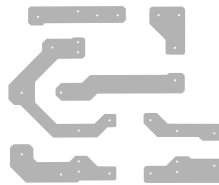
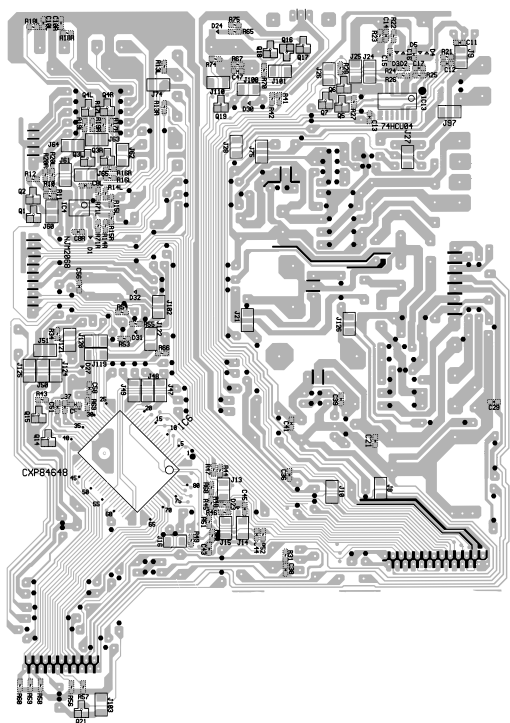


6. PARTS LOCATION (Pattern Side)



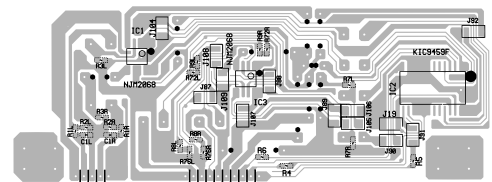
MAIN BOARD

Q4L Q4R
Q1 Q2 IC4 Q3L Q3R
Q14 Q15
Q21
Q16-Q18
Q19 Q5-Q7 IC13



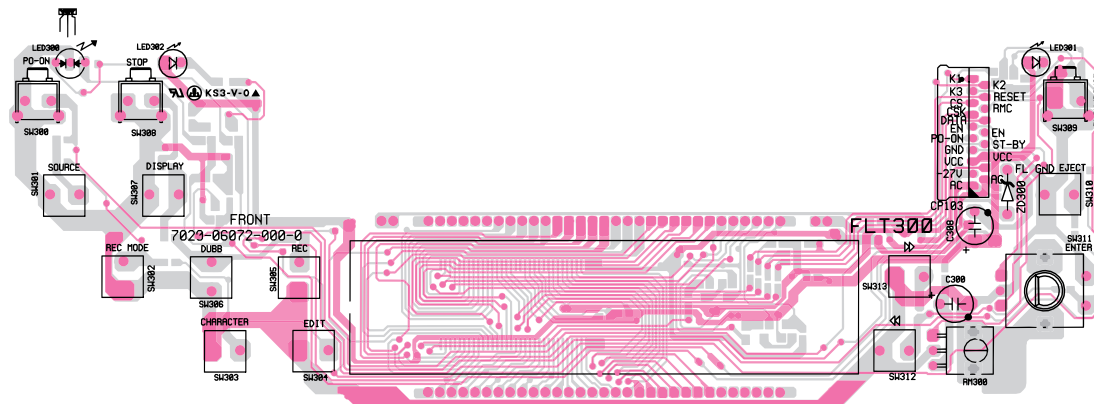
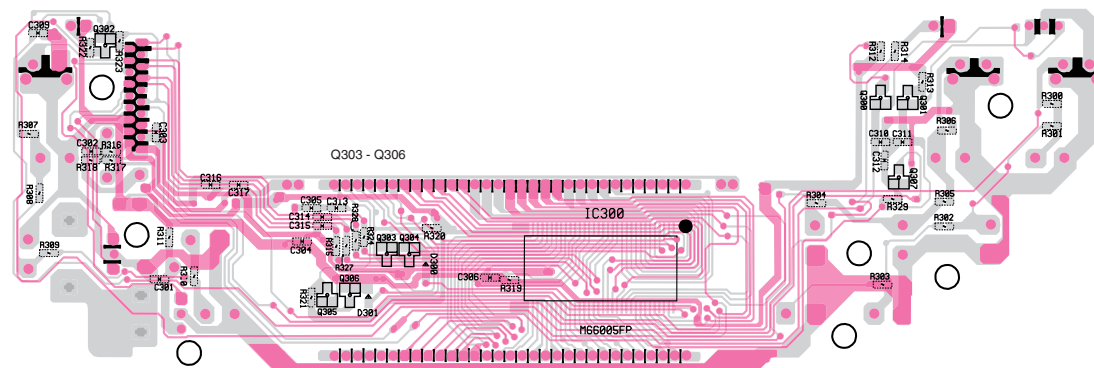
REC BOARD

IC1 IC3 IC2



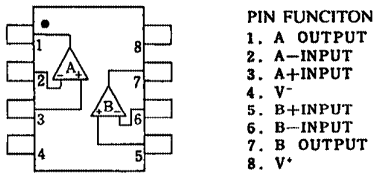
FRONT BOARD
Q302

Q300 Q301
Q307



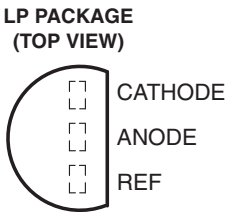
7. IC DATA
IC1/3/4:NJM2068

Pin Configuration

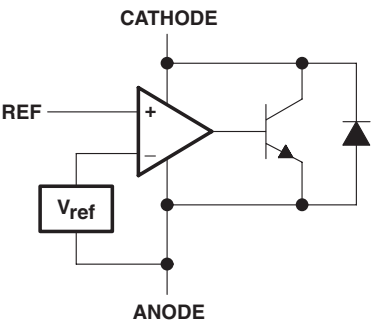


IC7:TL431

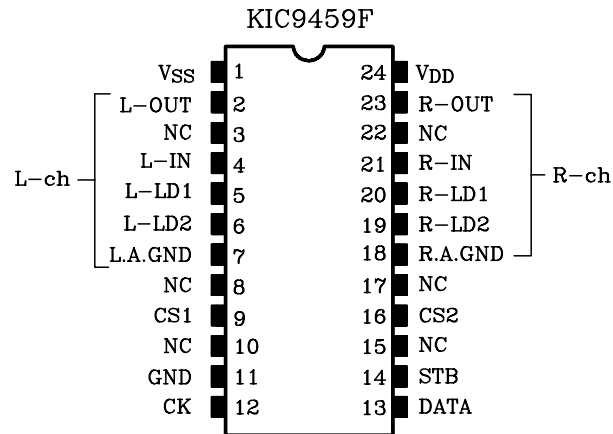
Pin Assignment



Functional Block Diagram

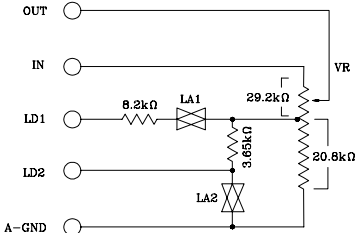


PIN CONNECTION

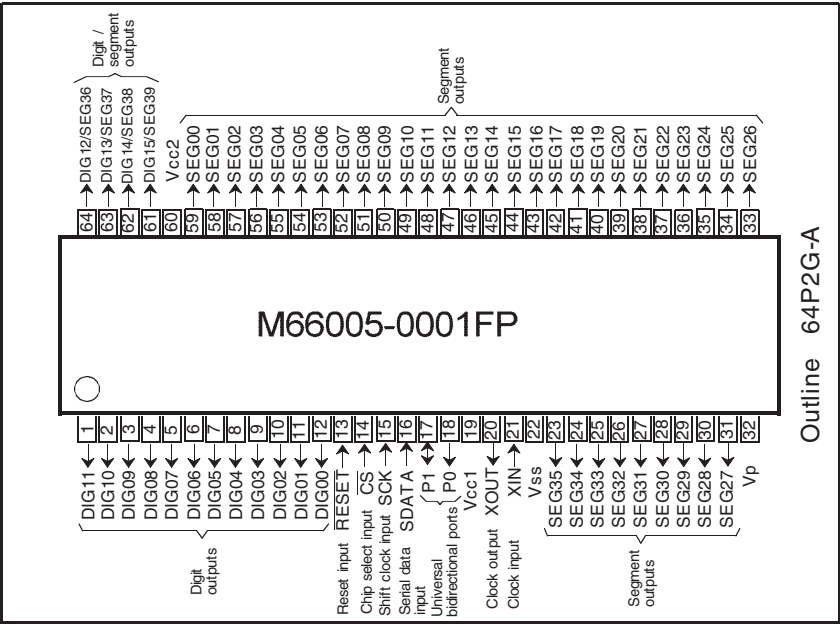


PIN DESCRIPTION

Numerals in () means the pin No. of KIC9459F

Pin No.	SYMBOL	PIN NAME	FUNCTION	REMARK								
1 (1)	V _{SS}	Negative power supply pin	When using dual power supplies { VDD=6.0~17V GND=0V VSS=-6.0~-17V When using a single power supply { VDD=6.0~18V GND=VSS=0V	-								
13 (11)	GND	Digital GND pin										
28 (24)	V _{DD}	Positive power supply pin										
3 (2)	L-OUT	volume output pin		-								
26 (23)	R-OUT											
5 (4)	L-IN	volume input pin										
24 (21)	R-IN											
6 (5)	L-LD1	Loudness tap output pin										
23 (20)	R-LD1											
7 (6)	L-LD2											
22 (19)	R-LD2											
8 (7)	L-A-GND	Analog GND pin										
21 (18)	R-A-GND											
			<table><tr><td></td><td>LA1</td><td>LA2</td></tr><tr><td>Loudness "ON"</td><td>ON</td><td>OFF</td></tr><tr><td>Loudness "OFF"</td><td>OFF</td><td>ON</td></tr></table>		LA1	LA2	Loudness "ON"	ON	OFF	Loudness "OFF"	OFF	ON
	LA1	LA2										
Loudness "ON"	ON	OFF										
Loudness "OFF"	OFF	ON										
10 (9)	CS1	Chip select input pin	Up to 4 chips on the same bus can be used by switching over chip select code	-								
19 (16)	CS2											
14 (12)	CK	clock input pin	Data transfer clock input	Low threshold value input pin								
15 (13)	DATA	Data input pin	Volume setup serial data input									
16 (14)	STB	Strobe input pin	Data write strobe input									
2,4,9,11,12,17,18,20,25,27 (3) (8) (10) (15) (17) (22)	NC	No connection		-								

PIN CONFIGURATION

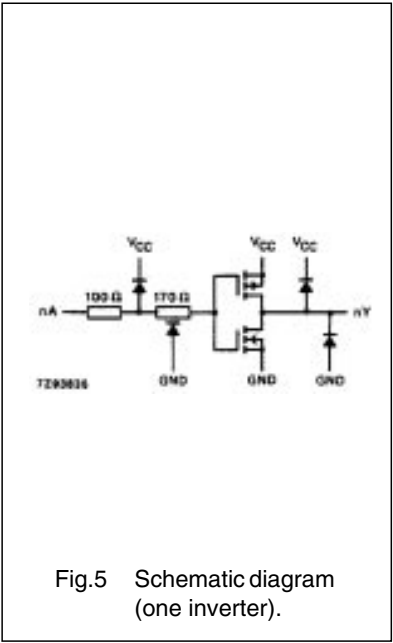
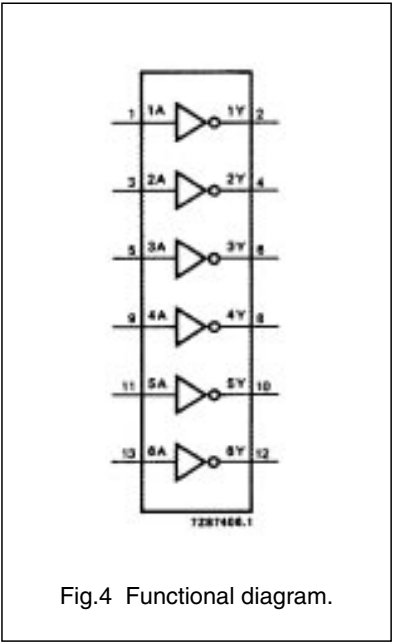
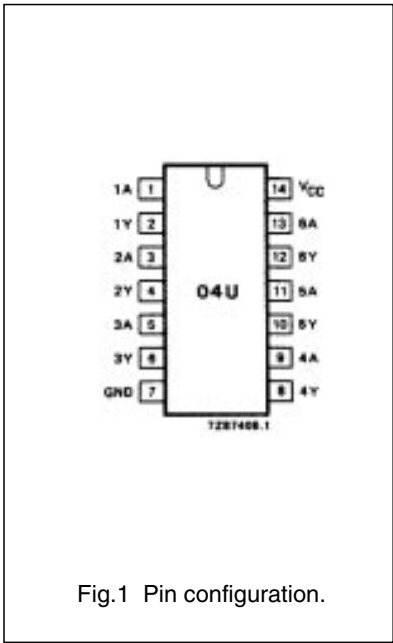


PIN DESCRIPTIONS

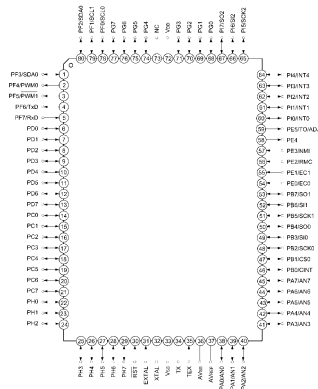
Symbol	Pin name	Comment
$\overline{\text{RESET}}$	Reset input	When "L", M66005 is initialized.
$\overline{\text{CS}}$	Chip select input	When "L", communication with the MCU is possible. When "H", any instruction from the MCU is neglected.
SCK	Shift clock input	Serial input data is taken and shifted by the positive edge of SCK.
SDATA	Serial data input	
XIN , XOUT	Clock input Clock output	When use as a CR oscillator, connect external resistor and capacitor. When use an external clock, input external clock to XIN, and XOUT must be opened.
DIG00~ DIG15	Digit output	Connect to digit (grid) pins of VFD.
SEG00~ SEG39	Segment output	Connect to segment (anode) pins of VFD. Pins from SEG00 to SEG39 correspond to segment pins of VFD as shown in the table below. SEG36~SEG39 pins are common to DIG12~DIG15 pins. So, when use SEG36~SEG39, the number of digit to be used is decreased.
P1, P0	Universal port P1 : bidirectional P0 : output	Generally, use this port as the static output port. This port also operates as the timing IN/OUT port to control another M66005.
Vcc1		Positive power supply for internal logic.
Vcc2		Positive power supply for DIG and SEG outputs.
Vss		GND (0V)
Vp		Negative power supply to pull down.

PIN DESCRIPTION

PIN NO.	SYMBOL	NAME AND FUNCTION
1, 3, 5, 9, 11, 13	1A to 6A	data inputs
2, 4, 6, 8, 10, 12	1Y to 6Y	data outputs
7	GND	ground (0 V)
14	V _{CC}	positive supply voltage



PIN ASSIGNMENT



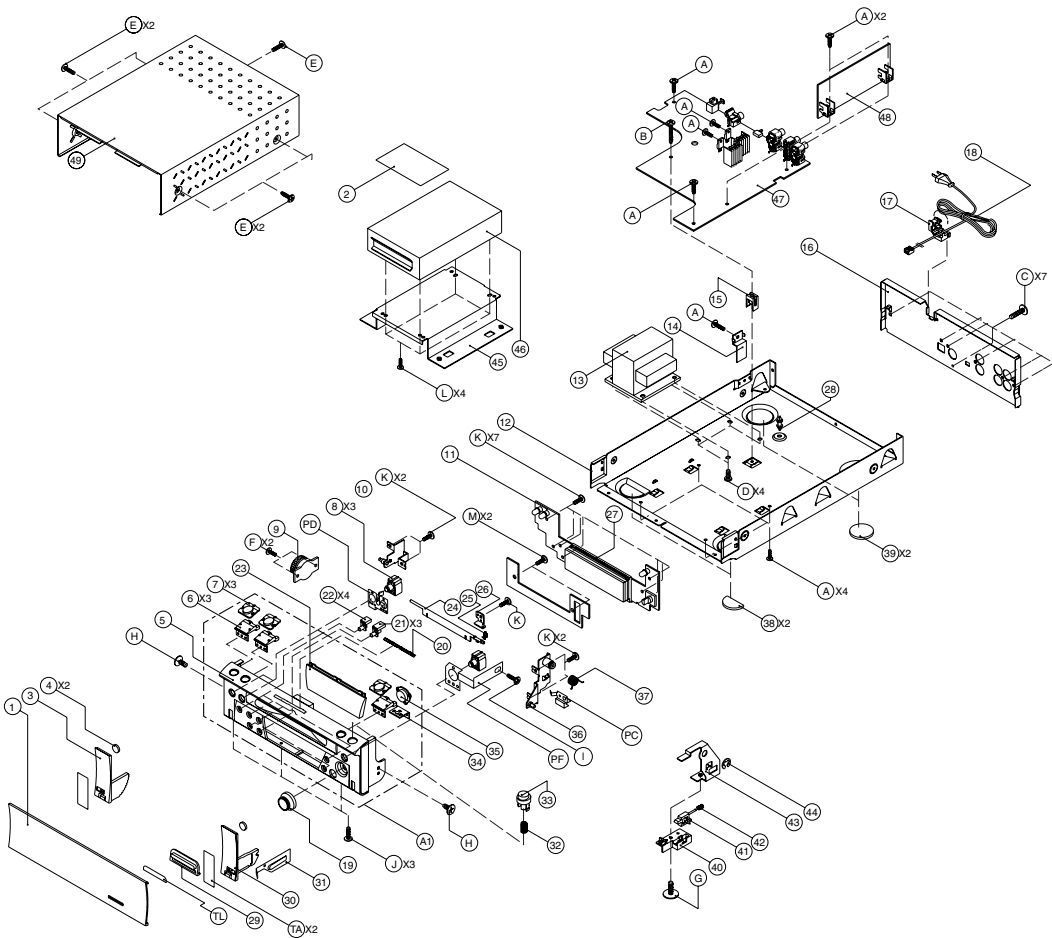
Note) NC (Pin 73) must be connected Vcc.

PIN FUNCTION

PIN NO	PIN NAME	OPERATION	DESCRIPTION	ASSIGN
1-3	N.C			I/O
4	ME_CTXD	UART Communication		O
5	ME_CRXD	UART Communication		I/O
6-13	N.C			I/O
14	ME_BACK_ON			O
15	CE			O
16	M_E_RESET			O
17-19	N.C			I/O
20	OPTION	PULL-UP(ENG) / PULL-DOWN(JAP)		I/O
21	N.C			I/O
22	VOL_CLK	CLK SIGNAL OUTPUT 9459F	ELECTRONIC VOLUME CONTROL	O
23	VOL_EN	EN SIGNAL OUTPUT 9459F	ELECTRONIC VOLUME CONTROL	O
24	VOL_DA	DA SIGNAL OUTPUT 9459F	ELECTRONIC VOLUME CONTROL	O

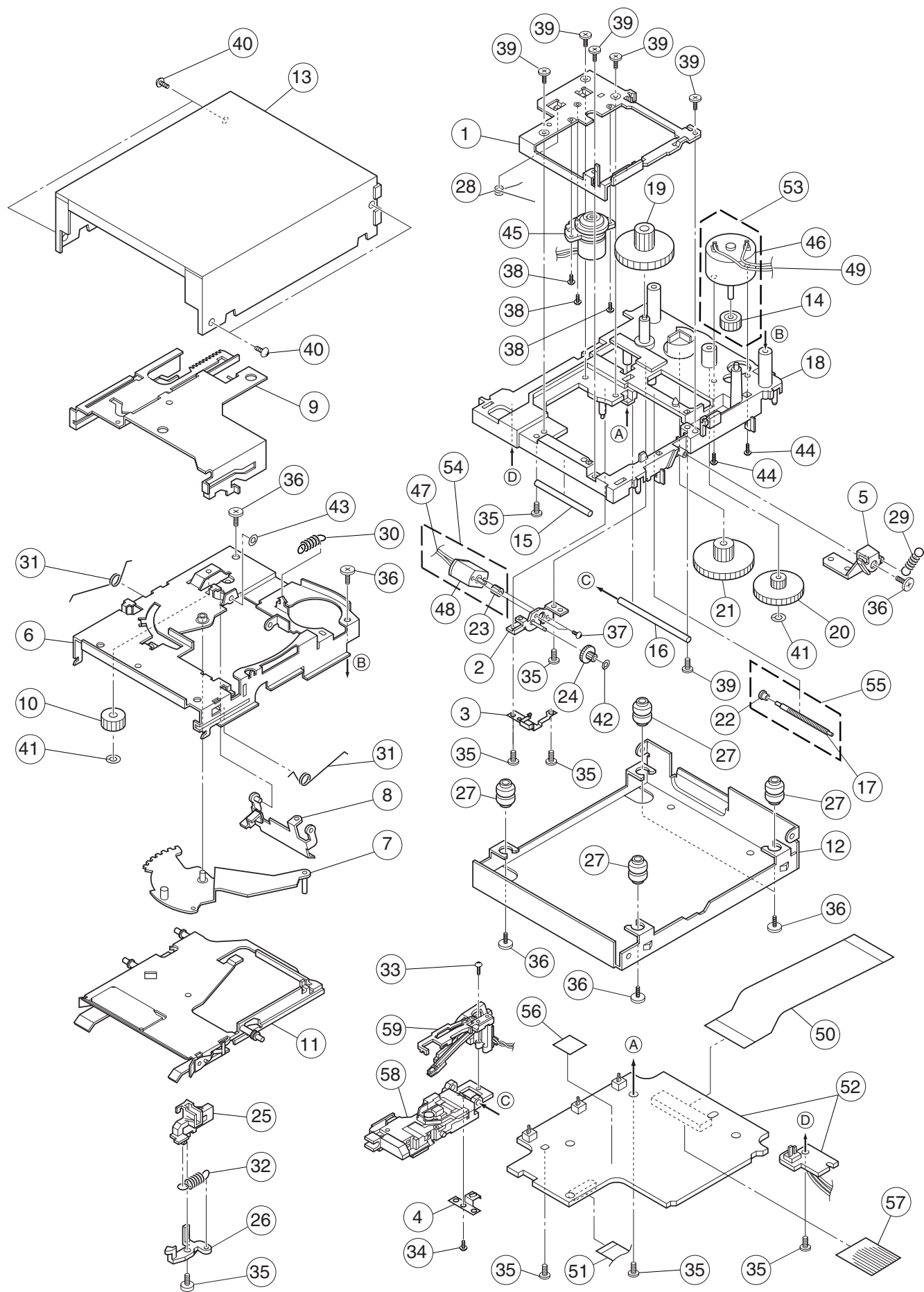
PIN NO	PIN NAME	OPERATION	DESCRIPTION	ASSIGN
25	A_MUTE	OUTPUT A_MUTE	ACTIVE LOW	O
26	D_MUTE	OUTPUT D_MUTE	ACTIVE LOW	O
27	N.C			I/O
28	PO_OFF_CONT	OUTPUT FOR RLY	ACTIVE HIGH	O
29	BACKUP_V			I
30	RESET	INPUT CPU	ACTIVE HIGH	I
31	EXTAL	OUTPUT FOR 12.288MHZ CRYSTAL		O
32	XTAL	12.288MHZ CRYSTAL		
33	VSS	VSS	GND	
34	TX	32MHZ CRYSTAL		
35	TEX	OUTPUT FOR 32MHZ CRYSTAL		O
36	AVSS	AVSS	GND	
37	AVREF	REFERENC VOLTAGE	VDD	
38	BACKUP_CH	OUTPUT BACKUP CHACK		O
39	KEY1	DATA INPUT KEY SCAN	CHECK PORT for AD KEY INPUT	O
40	KEY2	DATA INPUT KEY SCAN	CHECK PORT for AD KEY INPUT	O
41	KEY3	DATA INPUT KEY SCAN	CHECK PORT for AD KEY INPUT	O
42-45	N.C			I/O
46	FL_RESET	OUTPUT RESET FOR M66005		O
47	FL_CS	OUTPUT CS FOR M66005		O
48-54	N.C			I/O
55	RC5 SY IN/OUT	SYSTEM CONTROL	"HIGH": SYSTEM MODE, "LOW": INT MODE	O
56	RMC	OUTPUT FOR REMOCON DATA		O
57-59	N.C			O
60	PO_OFF_DET	OUTPUT FOR POWER DOWN		O
61	N.C			I/O
62	N.C			I/O
63	RC5_OUT	OUTPUT FOR CONTROLLING RC-5		O
64	RC5_IN	INPUT FOR CONTROLLING RC-5		I
65	FL_CLK	OUTPUT CLK FOR M66005		O
66	N.C			I/O
67	FL_DATA	OUTPUT DATA FOR M66005		O
68	ENCODER			I
69	ENCODER			I
70	BACK/PO_ON	OUTPUT TO DRIVE POWER ON(GREEN)	ACTIVE HIGH	O
71	ST-BY	OUTPUT TO DRIVE STBY LED(RED)	ACTIVE HIGH	O
72	VDD	VDD +5V		
73	VDD	VDD +5V		
74	RMC-CONTROL	OUTPUT FOR RC-5 ON/OFF		O
75-80	N.C			I/O

8. EXPLODED VIEW AND PARTS LIST



POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
1		9965 000 11414	PANEL DOOR	325W162010	A		nsp	SCREW +2S 3x8	nsp
2		nsp	LABEL LASER CAUTION-CD	nsp	B		nsp	B-TYPE ZNY/BH	nsp
3		9965 000 10697	ARM DOOR L	323W002010				SCREW +2S 3x17	nsp
4		9965 000 10698	CUSHION DOOR	323W259010				B-TYPE ZNY/BH	
A1		9965 000 11415	FRONT PANEL SUB ASSY	325W248500	C		nsp	SCREW +2S 3x10	nsp
5		nsp	PANEL FRONT	nsp				B-TYPE(DOT) BK/BH	
6		nsp	BUTTON POWER B	nsp	D		nsp	SCREW +3S 4x8	nsp
7		nsp	BUTTON POWER A	nsp				P+S-WASHER ZNY/BH	
8		9965 000 11103	BUTTON DISPLAY	325W270040	E		nsp	SCREW +2S 3x8	nsp
9		9965 000 10701	DAMPER GEAR (KIFCO)	323W130010				B-TYPE CR/BH	
10		9965 000 10702	BRACKET DOOR C	323W160060	F		nsp	SCREW +2S 2x6 BK/PH	nsp
11		nsp	P.C.B ASSY FRONT	nsp	G		nsp	SCREW +2S 3x8 PI9.5	nsp
12		nsp	CHASSIS MAIN	nsp				B-TYPE ZNY	
▲ 13	F	nsp	POWER TRANS	*TS001340R	H		nsp	SCREW +2S 3x5	nsp
			100V/50HZ 57x27					B-TYPE BK/FH	
▲ 13	N	9965 000 11416	POWER TRANS	*TS001330R	I		nsp	SCREW +3S 3x5 BK/FH	nsp
			230V/50HZ 57x27		J		nsp	SCREW +2S 3x6	nsp
14		nsp	BRACKET SIDE	nsp				B-TYPE ZNY/BH	
15		nsp	SUPPORTER PCB	nsp	K		nsp	SCREW +2S 3x8 ZNY/PH	nsp
16	F	nsp	CHASSIS BACK	nsp	L		nsp	SCREW +3S 2.6x4 ZNW/BH	nsp
16	N	nsp	CHASSIS BACK	nsp	M		nsp	SCREW 2PS 3x8Y	nsp
17	F	nsp	STOPPER	323W259020				PACKING	
17	N	9965 000 11058	STOPPER	323W259030	- N		9965 000 11419	USER GUIDE	325W851310
▲ 18	F	nsp	MAINS CORD ASSY	*YC000560R	- F		nsp	USER GUIDE	325W851110
▲ 18	N	9965 000 10705	MAINS CORD ASSY	*YC000570R	- N		9965 000 11420	REMOTE CONTROLLER	ZK326W0010
19		9965 000 11202	KNOB SHUTTLE	325W154010				RC110DRMD	
20		9965 000 10708	BADGE MARANTZ	323W251010	- F		nsp	REMOTE CONTROLLER	ZK325W0010
21		9965 000 11109	BUTTON MENU	325W270010				RC110DRMDF	
22		9965 000 11110	BUTTON REC	325W270020					
23		nsp	WINDOW DISPLAY MD	nsp					
24		9965 000 11417	DOOR MD	325W162100					
25		9965 000 11418	SPRING MD	325W115010					
26		nsp	BRACKET MD DOOR	nsp					
27		nsp	SUPPORTER FLT MD	nsp					
28		nsp	SUPPORTER P.C.	nsp					
29		9965 000 10709	WINDOW REMOCON B	323W158030					
30		9965 000 10713	ARM DOOR R	323W002020					
31		9965 000 11111	PLATE EARTH A	323W123010					
32		9965 000 10714	SPRING DOOR C	323W115010					
33		9965 000 10715	KNOB EJECT	323W154020					
34		nsp	SUPPORTER EJECT	nsp					
35		nsp	WINDOW REMOCON A	nsp					
36		9965 000 10716	BRACKET DOOR A	323W160010					
37		9965 000 10717	SPRING DOOR A	323W115020					
38		9965 000 10718	CUSHION FOOT F	323W057010					
39		9965 000 10719	CUSHION FOOT B	323W057020					
40		9965 000 10720	HOLDER HINGE B	323W271020					
41		9965 000 10721	HOLDER HINGE A	323W271010					
42		9965 000 10703	SPRING DOOR B	323W115030					
43		9965 000 10722	BRACKET DOOR B	323W160020					
44		9965 000 10723	RING	323W353100					
45		nsp	BRACKET MECHA MD	nsp					
46		nsp	MD MODULE MGM-07000A KPJ	325W304500					
47	N	nsp	P.C.B ASSY MAIN	nsp					
47	F	nsp	P.C.B ASSY MAIN	nsp					
48	N	nsp	P.C.B ASSY REC	nsp					
48	F	nsp	P.C.B ASSY REC	nsp					
49		9965 000 11113	CABINET TOP	324W257010				NOT STANDARD SPARE PARTS	
PC		nsp	PLATE EARTH "C"	nsp	- N		nsp	CARD	nsp
PF		nsp	PLATE EARTH "F"	nsp	- F		nsp	CARD	nsp
PD		nsp	PLATE EARTH "D"	nsp	- F		nsp	CARD	nsp
TA		nsp	TAPE ARM	nsp	-		nsp	BOX,GIFT	325W801010
TL		nsp	TAPE LENS	nsp	-		nsp	CUSHION,SNOW	323W809010

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.



POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
1		nsp	A10-3531 CHASSIS(TU)	nsp	53		nsp	T42-0984 MOTOR ASSY(LOAD)	*MM001180R
2		nsp	J19-6125 BRACKET ASSY	nsp	54		nsp	T42-0985 MOTOR ASSY(SLED)	*MM001190R
3		nsp	G02-1716	nsp	55		nsp	D13-2506 GEAR ASSY	nsp
			FLAT SPRING(THRUST)		56		nsp	G16-1236 SHEET	nsp
4		nsp	D13-2510 RACK(GEAR)	nsp	57		nsp	G11-2825 SOFT TAPE	nsp
5		nsp	D10-3958 LEVER(LIMIT)	nsp	58		nsp	T25-0111-05 PICKUP KMS-260E	*ZZ001880R
6		nsp	A11-1189 SUB CHASSIS ASSY	nsp	59		nsp	T30-0027-05	*LH400180R
7		nsp	D10-3959 ARM ASSY(MAIN)	nsp				REC HEAD RM-21E	
8		nsp	D10-3961 LEVER ASSY(HEAD)	nsp					
9		nsp	D10-3963 SLIDER(MAIN)	nsp					
10		nsp	D13-2511 GEAR(FINAL)	nsp					
11		nsp	J19-6127 HOLDER ASSY	nsp					
12		nsp	A15-0106 FRAME	nsp					
13		nsp	F11-0503 SHIELDING CASE	nsp					
15		nsp	D10-3982 ROD(SUB)	nsp					
16		nsp	D10-3957 ROD	nsp					
18		nsp	A11-1187	nsp					
			SUB CHASSIS ASSY(TU)						
19		nsp	D13-2504 GEAR(LOAD A)	nsp					
20		nsp	D13-2505 GEAR(LOAD B)	nsp					
21		nsp	D13-2516 GEAR(LOAD C)	nsp					
24		nsp	D13-2509 GEAR	nsp					
			(INTERMEDIATE)						
25		nsp	D10-3964 SLIDER(LOAD)	nsp					
26		nsp	D10-3965 ARM(LOAD)	nsp					
27		nsp	J02-1492 INSULATOR	nsp					
28		nsp	G01-4230	nsp					
			TORSION COIL SP(SPM)						
29		nsp	G01-4231	nsp					
			EXTENSION COIL SPRING						
30		nsp	G01-4235	nsp					
			EXTENSION COIL SPRING						
31		nsp	G01-4233	nsp					
			TORSION COIL SPRING						
32		nsp	G01-4234	nsp					
			EXTENSION COIL SPRING						
33		nsp	N39-1745	nsp					
			MACHINE SCREW 1.7*4.5						
34		nsp	N09-3104	nsp					
			MECHINE SCREW 1.7*2						
35		nsp	N09-3279	nsp					
			MACHINE SCREW 1.7*3						
36		nsp	N09-5113	nsp					
			SCREW 1.7*7 (B-TITE)						
37		nsp	N09-5229 SCREW 1.4*1.8	nsp					
38		nsp	N09-5230	nsp					
			SCREW 1.4*2.2 (S-TITE)						
39		nsp	N09-5231	nsp					
			SCREW 1.7*4 (B-TITE)						
40		nsp	N86-2004	nsp					
			BIND TAPTITE SC 2*4(S-TITE)						
41		nsp	N19-0366	nsp					
			FLAT WASHER 2.1*4*0.5CUT						
42		nsp	N19-1511	nsp					
			FLAT WS 2.5*0.9*0.25 CUT						
43		nsp	N19-1171	nsp					
			FLAT WS 1.6*3.5*0.25 CUT						
44		nsp	N09-5285	nsp					
			MACHINE SCREW(B) 1.7*4.5						
45		nsp	T42-0983 MOTOR ASSY	*MM001170R					
47		nsp	E35-2689	nsp					
			WIRING HARNESS(SLED)						
49		nsp	E35-2690 WIRE HARNESS	nsp					
50		nsp	E35-2691 FLAT CABLE L=80MM	*YU000960R					
51		nsp	E35-2348 FLAT CABLE(PU)21P	*YU000970R					
52		nsp	X33-1260 PCB ASSY	*ZZ001870R					

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

9. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R***: 1) GD05 × × × 140, Carbon film fixed resistor, ±5% 1/4W
 R***: 2) GD05 × × × 160, Carbon film fixed resistor, ±5% 1/6W

① — Resistance value

Examples ;

① Resistance value
 0.1 Ω 001 10 Ω 100 1 kΩ 102 100 kΩ 104
 0.5 Ω 005 18 Ω 180 2.7 kΩ 272 680 kΩ 684
 1 Ω 010 100 Ω 101 10 kΩ 103 1 MΩ 105
 6.8 Ω 068 390 Ω 391 22 kΩ 223 4.7 MΩ 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C***: CERAMIC CAP.

3) DD1 × × × × 370, Ceramic capacitor
 Disc type
 Temp.coeff.P350 ~ N1000, 50V
 ② — Capacity value
 ③ — Tolerance

Examples ;

② Tolerance (Capacity deviation)
 ±0.25 pF 0
 ±0.5 pF 1
 ±5% 5

* Tolerance of COMMON PARTS handled here are as follows :

0.5 pF ~ 5 pF ±0.25 pF
 6 pF ~ 10 pF ±0.5 pF
 12 pF ~ 560 pF ±5%

③ Capacity value

0.5 pF 005 3 pF 030 100 pF 101
 1 pF 010 10 pF 100 220 pF 221
 1.5 pF 015 47 pF 470 560 pF 561

C*** : CERAMIC CAP.

4) DK16 × × × 300, High dielectric constant ceramic capacitor
 Disc type
 Temp.chara. 2B4, 50V
 ④ — Capacity value

Examples ;

④ Capacity value
 100 pF 101 1000 pF 102 10000 pF 103
 470 pF 471 2200 pF 222

C***: 5) ELECTROLY CAP. (⏏), 6) FILM CAP. (⏏)

5) EA × × × × × 10, Electrolytic capacitor
 One-way lead type, Tolerance ±20%
 ⑤ — Working voltage
 ⑥ — Capacity value

Examples ;

⑤ Capacity value
 0.1 μF 104 4.7 μF 475 100 μF 107
 0.33 μF 334 10 μF 106 330 μF 337
 1 μF 105 22 μF 226 1100 μF 118
 2200 μF 228

⑥ Working voltage

6.3V 006 25V 025
 10V 010 35V 035
 16V 016 50V 050

6) DF15 × × × 350 — Plastic film capacitor
 DF15 × × × 310 — One-way type, Mylar ±5% 50V
 DF16 × × × 310 — Plastic film capacitor
 One-way type, Mylar ±10% 50V
 ⑦ — Capacity value

Examples ;

⑦ Capacity value
 0.001 μF (1000 pF) 102 0.1 μF 104
 0.0018 μF 182 0.56 μF 564
 0.01 μF 103 1 μF 105
 0.015 μF 153

NOTE : 1) The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.

2) On the occasion, be confirmed the common parts on the parts list.

3) Refer to "Common Parts List" for the other common parts (R105, DD4, DK4).

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows;

1. KOA Corporation

Part No. (MJI)	Type No. (KOA)	Description
NH05 × × × 140	RF25S × × × × ΩJ	(±5% 1/4W)
NH05 × × × 120	RF50S × × × × ΩJ	(±5% 1/2W)
NH85 × × × 110	RF73B2A × × × × ΩJ	(±5% 1/10W)
NH95 × × × 140	RF73B2E × × × × ΩJ	(±5% 1/4W)

* Resistance value * Resistance value (0.1 Ω – 10 kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No. (MJI)	Type No. (MEC)	Description
NF05 × × × 140	ERD-2FCJ × × ×	(±5% 1/4W)
RF05 × × × 140		
NF02 × × × 140	ERD-2FCG × × ×	(±2% 1/4W)
RF02 × × × 140		

* Resistance value * Resistance value

Examples ;

* Resistance value
 0.1 Ω 001 10 Ω 100 1 kΩ 102 100 kΩ 104
 0.5 Ω 005 18 Ω 180 2.7 kΩ 272 680 kΩ 684
 1 Ω 010 100 Ω 101 10 kΩ 103 1 MΩ 105
 6.8 Ω 068 390 Ω 391 22 kΩ 223 4.7 MΩ 475

ABBREVIATION AND MARKS

ANT. : ANTENNA	BATT. : BATTERY
CAP. : CAPACITOR	CER. : CERAMIC
CONN. : CONNECTING	DIG. : DIGITAL
HP : HEADPHONE	MIC. : MICROPHONE
μ-PRO : MICROPROCESSOR	REC. : RECORDING
RES. : RESISTOR	SPK : SPEAKER
SW : SWITCH	TRANSF : TRANSFORMER
TRIM. : TRIMMING	TRS. : TRANSISTOR
VAR. : VARIABLE	X'TAL : CRYSTAL

NOTE ON FUSE :

Regarding to all parts of parts code **FS20xxx2xx**, replace only with Wickmann-Werke GmbH, Type 372 non glass type fuse.

NOTE ON SAFETY :

Symbol **⚠** Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol **⚠**. Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

安全上の注意 :

⚠がついている部品は、安全上重要な部品です。必ず指定されている部品番号の部品を使用して下さい。

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
			MAIN CIRCUIT BOARD						
			MAIN - CAPACITORS						
C6L		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp	R12		nsp	CHIP,680-J,1/16W-1608REEL	nsp
C6R		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp	R13L		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
C7L		nsp	FILM,ST-0.0027µF-J/100V-5RE	nsp	R13R		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
C7R		nsp	FILM,ST-0.0027µF-J/100V-5RE	nsp	R14L		nsp	CHIP,12K-J,1/16W-1608REEL	nsp
C8L		nsp	CER.CHIP,220pF-J/50V-1608	nsp	R14R		nsp	CHIP,12K-J,1/16W-1608REEL	nsp
C8R		nsp	CER.CHIP,220pF-J/50V-1608	nsp	R15L		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
C9L		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp	R15R		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
C9R		nsp	ELECT,22µF-M/16V,5x5-5RE	nsp	R16L		nsp	CHIP,220-J,1/16W-1608REEL	nsp
C10L		nsp	CER.CHIP,470pF-J/50V-1608	nsp	R16R		nsp	CHIP,220-J,1/16W-1608REEL	nsp
C10R		nsp	CER.CHIP,470pF-J/50V-1608	nsp	R17L		nsp	CHIP,220-J,1/16W-1608REEL	nsp
C11		nsp	CER.CHIP,0.01µF-K/50V-1608	nsp	R17R		nsp	CHIP,220-J,1/16W-1608REEL	nsp
C12		nsp	CER.CHIP,10pF-D/50V-1608	nsp	R18L		nsp	CHIP,100-J,1/16W-1608REEL	nsp
C13		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp	R18R		nsp	CHIP,100-J,1/16W-1608REEL	nsp
C14		nsp	CER.CHIP,22pF-J/50V-1608	nsp	R19L		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
C15		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp	R19R		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
C16		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp	R20L		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
C17		nsp	CER.CHIP,22pF-J/50V-1608	nsp	R20R		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
▲ C18		9965 000 11120	CER.AC(SAFETY), DE7150-487F 472MVAI	DK17472840	R21		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
C19		nsp	CER.,0.01µF-Z/500V-5RE	nsp	R22		nsp	CHIP,100-J,1/16W-1608REEL	nsp
C20		nsp	ELECT,1000µF-M/25V(SHL), 10x20L-5RE OEMONLY	nsp	R23		nsp	CHIP,75-J,1/16W-1608REEL	nsp
C21		nsp	CER.CHIP,0.01µF-K/50V-1608	nsp	R24		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
C22		nsp	ELECT,SHL 10000µF 16V M 18x35 P=7.5MM	nsp	R25		nsp	CHIP,10K-J,1/16W-1608REEL	nsp
C23					R26		nsp	CHIP,2.2K-J,1/16W-1608REEL	nsp
5		nsp	CER.,0.01µF-Z/500V-5RE	nsp	R27		nsp	CHIP,120-J,1/16W-1608REEL	nsp
C28					R28		nsp	CHIP,120-J,1/16W-1608REEL	nsp
C29		nsp	CER.CHIP,0.01µF-K/50V-1608	nsp	R29		nsp	47-J,1/4W-R.REEL	nsp
C30		nsp	CER.CHIP,100pF-J/50V-1608	nsp	R30		nsp	4.7-J,1/4W,R.REEL	nsp
C31		nsp	ELECT,10µF-M/50V,5x11-5RE	nsp	R31		nsp	CHIP,2.2K-J,1/16W-1608REEL	nsp
C32		nsp	ELECT,100µF-M/50V,8x11.5-5	nsp	R32		nsp	5.6K-J,1/5W-52RE-AX	nsp
C33		nsp	ELECT,10µF-M/50V,5x11-5RE	nsp	R33		nsp	22K-J,1/5W-52RE-AX	nsp
C34		nsp	ELECT,2200µF-M/16V,10x20	nsp	R34		nsp	CHIP,10K-J,1/16W-1608REEL	nsp
C35		nsp	ELECT,2200µF-M/16V,10x20	nsp	R37		nsp	150-J,1W-R.REEL	nsp
C36		nsp	CER.CHIP,0.01µF-K/50V-1608	nsp	R38		nsp	1.6K-J,1/5W-52RE-AX	nsp
C37		nsp	CER.CHIP,27pF-J/50V-1608	nsp	R39		nsp	1.5K-J,1/5W-52RE-AX	nsp
C38		nsp	ELECT,470µF-M/10V,6.3x11-5	nsp	R40		nsp	4.7K-J,1/5W-52RE-AX	nsp
C39		nsp	CER.CHIP,100pF-J/50V-1608	nsp	R41		nsp	CHIP,100-J,1/16W-1608REEL	nsp
C40		nsp	ELECT,1000µF-M/10V,10x12.5	nsp	R42		nsp	CHIP,100K-J,1/16W-1608REEL	nsp
C41		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp	R43		nsp	CHIP,4.7K-J,1/16W-1608REEL	nsp
C42		9965 000 11128	DOUBLE LAYER(70), 0.047F-70UA/5.5V-5RE	*EX000090R	R44		nsp	CHIP,47K-J,1/16W-1608REEL	nsp
C43		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp	R45		nsp	CHIP,47K-J,1/16W-1608REEL	nsp
C44		nsp	CER.CHIP,220pF-J/50V-1608	nsp	R46		nsp	CHIP,3.9K-J,1/16W-1608REEL	nsp
C45		nsp	CER.CHIP,220pF-J/50V-1608	nsp	R47		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
C46		nsp	ELECT,1µF-M/50V,3x5-5RE	nsp	R48		nsp	CHIP,2.7K-J,1/16W-1608REEL	nsp
C47		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp	R49	N	nsp	CHIP,100K-J,1/16W-1608REEL	nsp
▲ C48		9965 000 11120	CER.AC(SAFETY),DE7150-487F 472MVAI	DK17472840	R50	F	nsp	CHIP,100K-J,1/16W-1608REEL	nsp
C49		nsp	ELECT,10µF-M/50V,5x11-5RE	nsp	R51		nsp	CHIP,100-J,1/16W-1608REEL	nsp
C50		9965 000 11120	CER.AC(SAFETY), DE7150-487F 472MVAI	DK17472840	R52		nsp	CHIP,10K-J,1/16W-1608REEL	nsp
C51		nsp	CER.CHIP,27pF-J/50V-1608	nsp	R57		nsp	CHIP,10K-J,1/16W-1608REEL	nsp
C52		nsp	ELECT,2.2µF-M/50V,5x11-5RE	nsp	R58		nsp	CHIP,12K-J,1/16W-1608REEL	nsp
C53		9965 000 11128	DOUBLE LAYER(70), 0.047F-70UA/5.5V-5RE	*EX000090R	R59		nsp	CHIP,12K-J,1/16W-1608REEL	nsp
C55		nsp	ELECT,47µF-M/16V,5x11-5RE	nsp	R60		nsp	CHIP,47-J,1/16W-1608REEL	nsp
C56		nsp	CER.CHIP,0.1µF-K/50V-1608	nsp	R65		nsp	CHIP,47-J,1/16W-1608REEL	nsp
C57		nsp	CER.CHIP,18pF-J/50V-1608	nsp	R66		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
C58		nsp	CER.CHIP,18pF-J/50V-1608	nsp	R67		nsp	CHIP,47-J,1/16W-1608REEL	nsp
			MAIN - RESISTORS		R68		nsp	CHIP,1K-J,1/16W-1608REEL	nsp
R10		nsp	CHIP,3.3K-J,1/16W-1608REEL	nsp	R69		nsp	CHIP,1M-J,1/16W-1608REEL	nsp
R11		nsp	CHIP,3.3K-J,1/16W-1608REEL	nsp	R70		nsp	CHIP,10K-J,1/16W-1608REEL	nsp
					R71L		nsp	CHIP,680-J,1/16W-1608REEL	nsp
					R71R		nsp	CHIP,680-J,1/16W-1608REEL	nsp
					R73		nsp	1-J,1/4W-R.TYPE REEL	nsp
					R74		nsp	CHIP,47K-J,1/16W-1608REEL	nsp
					R75		nsp	CHIP,2.2K-J,1/16W-1608REEL	nsp
					R77		nsp	1-J,1/4W-R.TYPE REEL	nsp

NOTE : "nsp" PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)	POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJI)
D1			MAIN - SEMICONDUCTORS		Q18	N	4822 130 60729	CHIP TRS.2SC,	*BA001040R
D5		9965 000 11119	D CHIP,1SS355USM	*HD201580R	Q18	F	9965 000 10753	DTC144EK,0.2W/SMT-REEL	*BA001220R
D6					Q18	F	4822 130 60729	CHIP TRS.2SC,	*BA001040R
D9		9965 000 10728	DIODE,IN4007 52 1000V 1A	*HD201570R	Q19		9965 000 10753	DTC144EK,0.2W/SMT-REEL	*BA001220R
D11		4822 130 32778	DIODE,1SS133T-72-52MM	HD20015210	Q20		4822 130 61227	CHIP TRS.2SC,	*BA001330R
▲ D12		4822 130 83067	D,RECTIFIER BRIDGE, D3SB20/DBF40C 5A-4PIN	HE20020290	Q21		4822 130 90326	KRC102S T/P (KEC)	*BA001280R
D13					ZD1		9965 000 11210	DTA114ES,0.3W/TO92M-REEL	*HD301950R
D20		9965 000 10728	DIODE,IN4007 52 1000V 1A	*HD201570R	ZD2		4822 130 11627	CHIP TRS.2SA,	*HD302000R
D23		9965 000 11119	D CHIP,1SS355USM	*HD201580R	ZD3		4822 130 11627	DTA114TK,0.2W/SMT-REEL	*HD302000R
D24		9965 000 11119	D CHIP,1SS355USM	*HD201580R	ZD4		4822 130 10667	CHIP TRS.2SA,	HD30471000
D27		9965 000 11119	D CHIP,1SS355USM	*HD201580R	ZD5		4822 130 80317	DTA114TK,0.2W/SMT-REEL	HD30511000
D28		4822 130 32778	DIODE,1SS133T-72-52MM	HD20015210				D,ZENER,MTZJ20B-0.5W/5MA-52MM	
D29		4822 130 32778	DIODE,1SS133T-72-52MM	HD20015210				D,ZENER,MTZJ15B-0.5W/5MA-52MM	
D30		9965 000 11119	D CHIP,1SS355USM	*HD201580R				D,ZENER,MTZJ15B-0.5W/5MA-52MM	
D31		9965 000 11119	D CHIP,1SS355USM	*HD201580R				D,ZENER,MTZJ4.7B-0.5W/5MA-52MM	
D32		9965 000 11119	D CHIP,1SS355USM	*HD201580R				D,ZENER,MTZJ5.1B-0.5W/5MA-52MM	
IC4		5322 209 13406	IC,NJM2068MD-SOP8P	*HC107380R					
IC7		4822 209 81397	ILINEAR-REGULATOR, TL431CLP 3PIN	*HC300440R	CN1		nsp	MAIN - MISCELLANEOUS	nsp
IC8		4822 209 31631	IC,KIA7805PI, 20W-TO220IS MOLD	HC3890509F	CN2		nsp	CN.FPC 1.0MM,	nsp
IC9		4822 209 31631	IC,KIA7805PI, 20W-TO220IS MOLD	HC3890509F	CN3		nsp	52806-2610 26P STRAIGHT	nsp
IC10		9965 000 11426	IC,ICP-N15 T104/PROTEC-REEL	FU60115020	CN4		nsp	CN.WAFER 2.5MM,5267-08A 8P	nsp
IC11		9965 000 11426	IC,ICP-N15 T104/PROTEC-REEL	FU60115020	CN5		nsp	CN.FPC 1.0MM,	nsp
IC12		9965 000 11129	IC,KIA7032P,3.2V/TO92-RELL	*HC107390R				52806-1910 19P STRAIGHT	nsp
IC13		9965 000 10992	IC,INVRTR MC74HCU04AD SOP14	*HC700180R	▲ F1	N	4822 070 31601	CN.WAFER 2.0MM,	nsp
Q1		9965 000 11427	CHIP TRS.2SA,KRA103S (SOP)	*BA001400R	▲ F1	F	nsp	35336-1010 10P	nsp
Q2		4822 130 60729	CHIP TRS.2SC, DTC124EK,0.2W/SMT-REEL	*BA001080R	F1L		nsp	CN.WAFER 2.0MM,	nsp
Q3L		9965 000 10744	CHIP TRS.2SC, KTC2875B 0.15W/LOW-ON-RES SOT23(RTK)-REEL	*HT300870R	F1R		nsp	35336-0510 5P	nsp
Q3R		9965 000 10744	CHIP TRS.2SC, KTC2875B 0.15W/LOW-ON-RES SOT23(RTK)-REEL	*HT300870R	GND1		nsp	FUSE (5.2x20),	*FS000450R
Q4L		9965 000 10744	CHIP TRS.2SC, KTC2875B 0.15W/LOW-ON-RES SOT23(RTK)-REEL	*HT300870R	J8		nsp	250V-T160MA-S/V/B/R(YARN)	*FS000830R
Q4R		9965 000 10744	CHIP TRS.2SC, KTC2875B 0.15W/LOW-ON-RES SOT23(RTK)-REEL	*HT300870R	J126			FUSE (5.2x20),250V-S1A-U/	nsp
Q5		4822 130 60729	CHIP TRS.2SC, DTC124EK,0.2W/SMT-REEL	*BA001080R	JACK1		9965 000 10734	HOLDER,FUSE CLIP,	nsp
Q6		4822 130 60729	CHIP TRS.2SC, DTC124EK,0.2W/SMT-REEL	*BA001080R	JACK2		9965 000 11212	PI5.2-REEL	nsp
Q7		9965 000 11427	CHIP TRS.2SA,KRA103S (SOP)	*BA001400R	JACK3		9965 000 11127	HOLDER,FUSE CLIP,	nsp
Q8		4822 130 50437	SEMI,BRT/NPN RC,DTC143ES, 0.3W/TO92M-REEL	*BA001300R	JACK4		9965 000 11126	PI5.2-REEL	nsp
Q9		9965 000 10444	SEMI,BRT/NPN RC,KRC107M, 0.4W/TO92M-REEL	*BA001070R				TERMINAL,	nsp
Q10		4822 130 11683	SEMI,TR/GE PNP 2SA, KSA916Y,0.9W/TO92L-REEL	*HT100460R				ALL PBST/GND PLATE-REEL	nsp
Q12		9965 000 11425	SEMI,TR/GE NPN 2SD, KTC2026Y TO220IS BULK 2W	*HT300780R				CHIP,0-J,1/8W-3216REEL	nsp
Q14		4822 130 60326	CHIP TRS.2SA, DTA144EK,0.2W/SMT-REEL	*BA001050R	J126				
Q15		4822 130 60729	CHIP TRS.2SC, DTC144EK,0.2W/SMT-REEL	*BA001040R	JACK1		9965 000 10734	TER,RCA 4PIN,	*YT002460R
Q18	N	9965 000 10753	CHIP TRS.2SC, KRC102S T/P (KEC)	*BA001220R	JACK2		9965 000 11212	DAERYUNG/JK040131PN	*YJ002500R
					JACK3		9965 000 11127	MODULE,GP1F37R1/	*YJ002670R
					JACK4		9965 000 11126	OPTICAL TRANSMITE	*YJ002490R
					▲ LT1		9965 000 11422	TER,RCA 1PIN,	*FN000150R
					▲ RL1		9965 000 11424	JE010003PN(GND) BLACK	*LY000280R
					SW1		9965 000 10732	TER,RCA 2PIN,JK020130LN	
					▲ T1	N	9965 000 11027	(GND PLATE&PIN)/ORINGE	
					▲ T1	F	nsp	COIL,LINE FILTER,	
					W1		nsp	UU1116 1MH(411B)	
					W2		nsp	RELAY,SDT-S-109LMR	
					XTAL1		9965 000 11423	9V 250V/5A	
					XTAL2		9965 000 11124	SW,SLIDE,SSAF112NA011	
								TRANS ST/BY,230/50 RV5080R	
								28x25 Io=22MA 12.5Vx0.1A(DC)	
								TRANS ST/BY,AVC5/	
								100V 50HZ 28x15	
								CN.WAFER 7.92MM,	
								YW396-32V 2P	
								CN.WAFER3.96MM,35328-0210	
								CRYSTAL,12.288MHZ,	
								HC49U-CL;20pF	
								CRYSTAL,MX-38T(32.768KHZ)	
								NDK	

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POS. NO	VERS. COLOR	PART NO. (FOR PCS)	DESCRIPTION	PART NO. (MJL)
IC1		5322 209 13406	REC - SEMICONDUCTORS IC,NJM2068MD-SOP8P	*HC107380R
IC2		9965 000 01373	IC,KIC9459F/SOP24P	HC10449050
IC3		5322 209 13406	IC,NJM2068MD-SOP8P	*HC107380R
			REC - MISCELLANEOUS	
BKT1		nsp	BRACKET,AVR3300(E3) (DENON) SPTE 0.8t/SCREW	nsp
BKT2		nsp	BRACKET,AVR3300(E3) (DENON) SPTE 0.8t/SCREW	nsp
CP4		nsp	CN.WAFER 2.0MM, 35237-1010 10P	nsp
CP5		nsp	CN.WAFER 2.0MM, 35237-0510 5P	nsp
J19 J109		nsp	CHIP,0-J,1/8W-3216REEL	nsp

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